

LOGIC FOR PHILOSOPHY

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Description

The goal of this course is “logic literacy”. Contemporary philosophy is steeped in logic: to read journal articles and take part in discussions, one needs to know a certain amount of logic. We will study i) the basic techniques of logic, including syntax, semantics, proof theory, metalogic, and a bit of philosophy of logic; and ii) a number of extensions of standard logic that are important in philosophy (for example, intuitionist logic, modal logic, counterfactuals). The course will be more broad than deep: we will examine many different systems, but will not spend a lot of time proving difficult metalogical results about these systems (except for completeness in propositional modal logic.) This course satisfies the logic requirement of NYU’s graduate program.

Readings

The course text is available online here:

<http://tedsider.org/books/lfp.html>

Requirements

Two exams (70%), plus periodic homework assignments (30%). Assignments will be posted on the course web site:

http://tedsider.org/teaching/lfp/lfp_course.html

Schedule

- Basics of logic
- Standard propositional logic: syntax, semantics, sequents, axioms
- Nonstandard propositional logic: alternate connectives, Polish notation, three-valued logic, supervaluations, intuitionist logic
- Standard predicate logic: syntax, semantics, axioms
- Additions to standard predicate logic: identity, function symbols, descriptions, generalized quantifiers, second-order logic; free logic
- Propositional modal logic: syntax, semantics, axioms, soundness, completeness
- Variations on propositional modal logic: semantics for tense logic, semantics for intuitionist propositional logic
- Counterfactual conditionals: Stalnaker, Lewis
- Quantified modal logic: syntax, semantics, axioms
- Two-dimensional modal logic